

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow.

Status of the Claims

Claims 1-20 are not amended. Claims 21-22 were withdrawn by the Examiner. Claims 23 and 24 are added to further clarify features of claims 1 and 11. (See Figure. 10, and related description) No new matter is added.

Form PTO-892

Under MPEP 707.05(e), the Examiner should provide the citations of each reference cited in a rejection on the "Notice of Reference Cited" form PTO-892. The PTO-892 form provided with the Office Action of January 23, 2009 fails to cite to U.S. Patent No. 6,393,690 (to Snitchler et al.) which was cited in the Office Action. Applicant respectfully requests an amended PTO-892 form to show that the Snitchler et al reference is of record.

Amendments to the Specification

No new matter is added, the amendments to the specification are described in minor detail below. Amendments to the specification are made that add M in front of Pa as the unit of measure. MPa has been used through the application and thus no new matter is added. One amendment removes an extra parentheses. Another amendment replaced a P with an X because the X is referring to X-ray spectroscopy. Another amendment relates to, Oxide superconductor filaments being designated as 2c and the last amendment to the specification is consistent with Fig. 21 that shows a cross sectional view of the wire is perpendicular to the plane of the figure. Therefore no new matter is added.

Claim Rejections – 35 USC §103

Claims 1-8 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. Patent No. 6,632,776) in view of Snitchler et al. (U.S. Patent No. 6,393,690). Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Snitchler further in view of Jin et al (U.S. Patent No. 4,952,554). Claim 10 is

rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Snitchler et al. further in view of Hikata et al (U.S. Patent No. 5,236,891). These rejections are respectfully traversed. These rejections are respectfully traversed for the following reasons.

Claims 1 and 13 each recite a method of manufacturing an oxide superconducting wire comprising, among other features, the following:

a heat treatment step of heat-treating said wire in a pressurized atmosphere having a total pressure of at least 1 MPa and less than 50 MPa in the heat treatment, wherein

pressurization is started from a temperature reducing 0.2 % yield strength of said metal below said total pressure in said heat treatment at a heat-up time before the heat treatment in said heat treatment step.

Kobayashi et al., Snitchler et al. or Jin et al., alone or in combination fail to teach suggest or render predictable at least the above recited features of claims 1 and 13. For example, each of the cited references fail to teach, suggest or render predictable, at least pressurization is started from a temperature reducing 0.2% yield strength of said metal.

In particular, on page 3, lines 18-21 the Office Action of January 23, 2009 recites, that 0.2% yield strength is effectively a temperature from 400 to 800 degree Celsius. Next, using that assumption, the Office Action refers to Snitchler et al. as teaching high pressure oxidation treatment at various temperatures including 450 C, 500 C, 787 C and 830 C. Lastly, the Office Action states that passivating the metal through oxidation is essentially the same as reducing the strength of the metal layer.

Applicants respectfully disagree with the above assumptions and further note that the cited references, alone or in combination, fail to teach, suggest or render predictable, the recited feature that pressurization is started from a temperature reducing 0.2 % yield strength of said metal.

For example, Kobayashi et al. teaches heat treating in a pressurized atmosphere containing oxygen in a pressurized atmosphere between 0.1 to 20 MPa. However Kobayashi et al. do not teach, suggest or render predictable, starting the pressurization after reaching

0.2% yield strength of said metal. Kobayashi et al.'s general disclosure of an oxygen pressurized atmosphere fails to address the pressurization starting point feature recited in claim 1.

Next, Snitcher et al. may teach heat treating in a high pressure oxidation treatment, but Snitcher et al., like Kobayashi et al., also fail to teach starting the pressurization from a temperature reducing 0.2% yield strength. The references, even in the combination proposed in the Office Action, fail to teach pressurization is started from a temperature reducing 0.2 % yield strength of said metal.

Lastly, features of Snitchler et al. teach away from using a pressurized atmosphere and instead teaches using high pressure oxygen. Using the high pressure oxygen would render Kobayashi et al. inoperable for its intended purpose. In particular, Snitchler et al. teaches an oxidation treatment using high pressure oxygen to oxidize elements surrounding the superconductor. (Snitchler et al., column 12, lines 33 – 35) Since oxygen can pass through a layer of silver, the pressurized oxygen may enter the superconducting composite article of Kobayashi et al. After the penetration of the oxygen, the superconductor of Kobayashi et al. would be compressed. The compression of the superconductor of Kobayashi et al. would lead to the formation of voids and blisters due to the oxygen that was used earlier. Consequently, the sintering density of the oxide superconductor cannot be improved and therefore the critical current density of the oxide superconductor cannot be improved as taught in Kobayashi et al.

In view of the forgoing reasons, features of claims 1 and 13 are not obvious over Kobayashi et al. in view of Snitchler et al. Therefore claims 1 and 13 are believed to be allowable. Because claims 2-10 depend from claim 1, they are believed to be allowable. Because claims 14-18 depend from claim 13, they are believed to be allowable.

Claims 11 and 19 recite among other features, using pressurized atmosphere and pressurization is started after the temperature of said atmosphere exceeds 400°C at a heat-up time before the heat treatment in said heat treatment step. The cited references fail to teach, suggest or render predictable the invention recited in those claims at least the above recited features.

Kobayahsi et al., Snitchler et al., or Jin et al., alone or in combination, fail to teach both using pressurized atmosphere and pressurization is started after the temperature of said atmosphere exceeds 400°C. As discussed above in relation to claims 1 and 13, Snitchler et al. teaches using the high pressure oxygen which would render Kobayashi et al. inoperable for its intended purpose. Next, Snitchler et al. may teach heat treatment, but it fails to teach or suggest, starting the pressurization after a given temperature.

Therefore claims 11 and 19 are believed to be allowable. Because claims 12 and 20 depend from claims 11 and 19, respectively, they are believed to be allowable for at least the same reasons claims 11 and 19 are believed to be allowable.

New Claims

New claims 23 and 24 are added to further protect aspects of the present invention. New claims 23 and 24 are supported by the present disclosure, at least with respect to claims 23 and 24 (for example, see Fig. 10, and related description). New claims 23 and 24 each dependent on independent claims 1 and 11, respectively. Accordingly, each of the new claims 23 and 24 are patentably distinguishable over the references of record, at least for reasons as discussed above with respect to claims 1 and 11. In addition each new claims 23 and 24 are further distinguished from the references of record.

For example, new claims 23 and 24 are dependent on claims 1, and 11, respectively, and incorporate every feature of the parent claims and further recite, further comprising maintaining the pressurized atmosphere below 1 MPa immediately before the pressurization is started from a temperature reducing 0.2 % yield strength of said metal. As discussed above regarding claims 1 and 11, Kobayashi et al., Snitchler et al. and Jin et al. fail to teach, suggest or make predictable pressurization is started from a temperature reducing 0.2 % yield strength of said metal. Therefore claims 23 and 24 are believed to be allowable.

Concluding Remarks

After amending the claims as set forth above, claims 1-24 are pending in this application.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date April 23, 2009

By Kumar Maheshwari Reg No. 60443

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (213) 972-4594
Facsimile: (213) 486-0065

for: Ted R. Rittmaster
Attorney for Applicant
Registration No. 32,933